AMENDMENT TO THE CLAIMS

For the Examiner's convenience, a **Marked-Up Copy of the Claims Amended** is included herewith, in which text added to the claims is underlined and text deleted from the claims is struck-through. The Applicants have also included a **Clean Copy of Claims as Amended**, in which all claims pending after entry of this amendment are listed in an order which the Applicants believe is appropriate for issue.

Please amend the claims as follows.

1 – 70. (Canceled)

71. (Currently Amended) A method comprising

assessing ~~a relative~~ the degree to which a human is susceptible to an undesirable bone density condition by identifying ~~a polymorphic form identified as associated with a bone density pathology in each of~~ occurrence in a human's genome of a quantity of polymorphisms in each of two genes, the genes consisting of

a gene encoding a vitamin D receptor (VDR) present in the human's genome, and

a gene encoding interleukin-6 (IL-6) present in the human's genome ~~wherein the polymorphic form is selected from the group consisting of~~

~~a) occurrence of a *FokI* polymorphism in the gene encoding a vitamin D receptor defined by a C/T nucleotide in exon 2, at the first of two potential translation sites, whereby the residue is part of an initiation codon and the gene encodes a variant vitamin D receptor comprising three additional amino acids at its amino terminus;~~

~~b) occurrence of a *BsmI* polymorphism in the gene encoding vitamin D receptor defined by a T/C change in intron 8;~~

~~c) occurrence of a *ApaI* polymorphism in the gene encoding vitamin D receptor defined by a T/G change in intron 8;~~

~~d) occurrence of a *TaqI* polymorphism in the gene encoding vitamin D receptor defined by a T/C change in exon 9; and~~

~~e) occurrence of a polymorphism in the IL-6 gene promoter defined by a G/C change at position -174,~~

wherein the polymorphism in the VDR gene is a polymorphism manifested as change from a cytosine residue to a thymine residue 8 residues upstream of the normal start codon of the gene encoding vitamin D receptor, whereby the residue is part of an initiation codon and the gene encodes a variant vitamin D receptor comprising three additional amino acids at its amino terminus, and the polymorphism in the IL-6 gene is manifested as a change from a guanine residue to a cytosine residue at position -174 of the interleukin gene 6 promoter

thereafter calculating a susceptibility value for the condition by ~~either~~

summing the quantity of identified polymorphisms to yield a value for the human~~,~~

~~or~~

~~assigning a weighting factor to each polymorphism and then summing the weighting factors to yield a value for the human,~~

wherein a value for the human greater than ~~a value for a control~~ zero indicates a greater susceptibility to ~~the~~ an undesirable bone density condition for the human~~,~~. ~~and wherein the polymorphic form is a disorder associated polymorphism,~~

~~the method hereby assessing the relative degree to which the human is susceptible to the undesirable bone density condition.~~

72. (Currently Amended) The method of claim 71 wherein the susceptibility value ~~for the control is~~ of zero ~~and~~ represents an absence of a polymorphic form identified as associated with a bone density pathology in each of a gene encoding a vitamin D receptor present in the human's genome and a gene encoding interleukin-6 present in the human's genome.

73. (Currently Amended) The method of claim 71 wherein the ~~polymorphic form~~ polymorphism is a single nucleotide polymorphism (SNP).

74. (New) A method comprising assessing occurrence in a human's genome of polymorphisms in each of two genes, the genes consisting of a gene encoding a vitamin D receptor (VDR) and a gene encoding interleukin-6 (IL-6),

wherein the polymorphism in the VDR gene is a polymorphism manifested as change from a cytosine residue to a thymine residue 8 residues upstream of the normal start codon of the gene encoding vitamin D receptor, whereby the residue is part of an initiation codon and the gene encodes a variant vitamin D receptor comprising three additional amino acids at its amino terminus, and the polymorphism in the IL-6 gene is manifested as a change from a guanine residue to a cytosine residue at position -174 of the interleukin gene 6 promoter;

whereby occurrence of the polymorphic form in each gene indicates an increased susceptibility of the human to an undesirable bone density condition relative to a human with fewer or no occurrences of the polymorphic form.

75. (New) A method comprising assessing occurrence in a human's genome of polymorphisms in each of two genes, the genes consisting of a gene encoding interleukin-6 (IL-6) and a gene encoding a vitamin D receptor (VDR),

wherein the polymorphism in the IL-6 gene is manifested as a change from a guanine residue to a cytosine residue at position -174 of the IL-6 promoter and the polymorphism in the VDR gene is selected from the group consisting of:

a) a polymorphism manifested as change from a cytosine residue to a thymine residue 8 residues upstream of the normal start codon of the gene encoding vitamin D receptor, whereby the residue is part of an initiation codon and the gene encodes a variant vitamin D receptor comprising three additional amino acids at its amino terminus; and

b) a *FokI* polymorphism defined by a C/T nucleotide in exon 2, at the first of two potential translation sites, whereby the residue is part of an initiation codon and the gene encodes a variant vitamin D receptor comprising three additional amino acids at its amino terminus;

whereby occurrence of the polymorphic form in each gene indicates an increased susceptibility of the human to an undesirable bone density condition relative to a human with fewer or no occurrences of the polymorphic form.